A WEEK IN SERRA DA ESTRELA, PORTUGAL IN EARLY SEPTEMBER 2001, WITH ADDITIONAL LEPIDOPTERA SPECIES FOR THE PORTUGUESE FAUNA

MARTIN F. V. CORLEY

Pucketty Farm Cottage, Faringdon, Oxfordshire SN7 8JP.
(mcorley@freeuk.com)

Abstract

Twenty-six species of Lepidoptera new to the Portuguese fauna are listed, preceded by a brief account of a week spent studying the Lepidoptera of the Serra da Estrela, Portugal, in September 2001.

Introduction

Although we had visited Portugal many times since 1989, my wife Alison and I had only visited the southern half of the country. For some time I had wanted to get into the more mountainous northern half. We arrived in Faro, in Algarve, on 30 August 2001, where we hired a car and stayed one night. The following morning we set off north after gathering up my own and borrowed collecting equipment. The next three nights were spent at Escusa in the Parque Natural da Serra de São Mamede near Portalegre in Alto Alentejo where I have been recording the Lepidoptera for the last six years. On 3 September we again headed north. Our route took us past Castelo Branco, Soalheira, Fundão and Serra da Guardunha, all places familiar to me from the literature as they were the hunting grounds of the great Portuguese lepidopterist Candido Mendes de Azevedo 100 years earlier. Under the scorching (35°C) late summer sun much of the area looked uninteresting, but it is clear from Mendes's records that this is not the case, or at least that it was not so a hundred years ago.

We arrived in mid-afternoon at Serra da Estrela, travelling up the valley of the Rio Zêzere to Manteigas from the east. Alison saw *Nymphalis antiopa* L. as we approached Manteigas. Serra da Estrela (*mountains of the star*) is a granite massif reaching a height of 1993m at Torre (*tower* – built to add the missing seven metres of altitude). These are the highest mountains in Portugal and the associated plateau is the largest area of high ground in the country. It also constitutes Portugal's largest natural park; the Parque Natural de Serra da Estrela is 55 km long and 25 km wide, with the longer axis running from south-west to north-east.

We were met at the Parque's office in Manteigas by Dr José Manuel Grosso-Silva, an all-round entomologist specialising in Coleoptera who had been surveying the insect fauna of the Parque Natural for the past three years, Pedro Pires an amateur lepidopterist from Coimbra with whom I had corresponded and his friend Fernando Romão. Fortunately all three spoke English, since our Portuguese is strictly limited. José's was excellent – he had done a British Council course to very good effect. Pedro's was not quite as good, but good enough to make puns in English using the scientific names of moths: she *comes* and she goes.

We were taken to the house belonging to the Parque where we were to stay for the week. We were on the upper floor of a house at Caldas de Manteigas close to the hot springs of Fonte Santa at 850m on the south side of the valley. The lower floor was occupied by a radio station co-ordinating forest fire fighting activities. This is manned by students over their summer vacation which coincides with the forest fire season. This was fortunate for us, since I managed to break our key almost as soon as we arrived. The students were able to let us in when we arrived back from moth-trapping in the early hours. Although spartan, conditions were quite adequate for our purposes, at least till the water supply failed towards the end of the week, which made cleaning up the house difficult on the day we left. The house is by the road running from Manteigas up the fine glacial valley of the Zêzere to the summit at Torre. It is just above a trout farm (*truticultura*) and below kennels where the local breed of sheep dogs are bred. Close to the house were plenty of well grown trees, predominantly sycamore *Acer pseudoplatanus* and narrow-leafed ash *Fraxinus angustifolia* with a few yews *Taxus baccata*, but many other species were present, many of them non-native species. 150 metres up the valley was an open slope with numerous streamlets and flushes and an abundance of green vegetation including the mint *Mentha suaveolens*, which is very attractive to butterflies. Later in the week, I walked through this area in the middle of the day. In half an hour I saw 17 species of butterfly, the most unusual being *Lycaena tityrus* (Poda), *Erynnis tages* (L.) and *Hesperia comma* (L.).

In the late afternoon we all drove up the valley of the Zêzere for about three kilometres. José had brought his girlfriend Patrícia, who had a leg in plaster. She remained near the cars while the rest of us walked up the valley floor for a little way along a path between tall brooms *Cytisus* sp. and small fields. *Agriphila deliella* (Hb.) flew up in numbers. It was getting late in the day for butterflies, but we did see *Satyrus actaea* (Esper) and *Brintesia circe* (Fabr.). A number of species of moth were recorded from wings we found on pools of water at or close to the edge of the river. Pedro and Fernando then returned home to Coimbra.

Back at the house, José and I set about finding a possible site to run an m.v. light. The only possibility was on a small flat area with a few weedy plants of *Mentha* and *Echium* below the house, down a steep flight of stone steps from the car park, adjacent to a storage area used by the owners of a stall by the trout farm and above a public convenience. The area was covered in litter from the car park above. I think I can fairly state that it was one of the most squalid sites in which I have ever run a moth light. Although it never produced large numbers of moths, over six nights it produced a surprisingly large number of species, including no less than eight species that had not previously been recorded in Portugal (new species for Portugal are marked with an * throughout this paper). Apart from the first night, when we stayed with the light from the time we returned from eating out, our practice was to take generators to a site somewhere in the Park, returning home some time after midnight, when the moths around the light were checked. In the morning I re-examined the catch and took the light in for the day. Some of the more notable species are as follows: 3-4 September: *Aristotelia decoratella* (Stdgr.), **Anacampsis*

populella (Clerck), *Caryocolum arenbergeri* Huemer, a previously known but undescribed species of *Bryotropha*, *Cosmia trapezina* (L.) (very few Portuguese records), *Atethmia algirica* (Culot), *Epilecta linogrisea* (D.& S.); 4-5 September: **Aroga velocella* (Zell.), *Catocala optata* (Godart), *Euplagia quadripunctaria* (Poda); 6-7 September: **Caryocolum proximum* (Haw.), **Eilema pseudocomplana* (Daniel), *Arctia caja* (L.) (very rare in Portugal); 7-8 September: **Eudemis profundana* (D.& S.), *Xanthorhoe ferrugata* (Clerck) (red form); 8-9 September: **Lozotaeniodes formosanus* (Geyer), **Acleris sparsana* (D.& S.), **Ecpyrrhorrhoe rubiginalis* (Hb.), *Merrifieldia tridactyla* (L.); 9-10 September: *Catoptria fulgidalis* (Hb.). Other regular visitors to the light were hornets *Vespa crabro* L., for which this is the only known site in the Park. They were not a problem, since they had become very quiet by the time we returned to the light. Only on the last night, when I had looked at the light and gone back into the house to sort the night's catch, I reached into my collecting bag for the lens I keep there and felt a sharp pain. I withdrew my hand, thinking I had pricked it on a thorn, but could find no projecting thorn, so I reached in again, this time with the other hand, for the lens in order to examine my hand for a small thorn. This time I again felt pricked and a hornet came out on my hand. A hornet sting (or two) was a "first" for me, but fortunately was no more troublesome than a wasp sting.

On the afternoon of 4 September, Alison and I explored the area around the summit at Torre and I found attractive ground for the night's trapping activities – around Covão do Boi at 1850 m, a little east of the summit in an area of gullies, boulders and heavily grazed patches of mountain pasture between granite tors and the spectacular towering Cântaro Magro. The vegetation consists of *Nardus stricta* dominating the grassy areas, a number of dwarf shrubs particularly among the boulders including *Juniperus communis* ssp. *alpina*, *Erica arborea, Echinospartum lusitanicum*, *Cytisus purgans* and *Genista anglica*. Patches of granite detritus and rock crevices had a number of the local specialities such as *Rumex suffruticosus*, *Minuartia recurva*, *Silene ciliata* and *Teucrium salviastrum*. In the afternoon the temperature was over 30°C, but at dusk when José and Patrícia joined us it fell rapidly to about 21°C, and as no moths appeared I feared that I had made a mistake trapping so high up so late in the year. In time moths did begin to appear and soon were present in numbers. After dark we were joined by another of my Portuguese correspondents, Ernestino Maravalhas, the most active lepidopterist in northern Portugal. About 65 species were recorded including **Xenolechia aethiops* (Humphreys & Westwood), *Teleiopsis bagriotella* (Duponchel), **Caryocolum mucronatellum* (Chrétien), *Eana nervana* (Joannis), *Symmoca serrata* Gozmány (endemic to Portugal), *Scotopteryx coelinaria* Graslin, **Charissa avilaria* (Reisser), *Gnophos obfuscatus* (D.& S.), *Hadena compta* (D.& S.), *Aporophyla haasi* Stdgr., *Polymixis xanthomista* (Hb.), *Calamia tridens* (Hufn.) and *Catocala nupta* (L.) (the first Portuguese record for about 70 years according to Ernestino). After packing up at about 01.00 hours, with the temperature having fallen little from when we began, we went back to Manteigas for refreshments in an all night café in town. Ernestino then left to drive the 250 kilometres to his home in Porto, as he had a report to write in the morning.

The following evening, by way of contrast, we set up lights by the River Mondego near Videmonte towards the eastern end of the Park, at 730 metres. We were informed this area had the most Mediterranean climate in the Park. In the valley were riverside trees and shrubs including alder (*Alnus glutinosa*), sallow (*Salix* sp.) and alder buckthorn *Frangula alnus*. On the slopes above were *Rubus*, *Cistus*, *Erica*, *Cytisus* and a few scrubby *Quercus ilex* ssp. *bullatus*. Three m.v. lights were used along with wine ropes. In one spot just above the river, the steepness of the slope made it impossible to use a light on a stand over a horizontal sheet, so a sheet was hung vertically, which was a technique I had not previously used. In total about 120 species were recorded. The wine ropes were not spectacularly successful but brought in *Catocala nupta* again, *Mormo maura* (L.) and *Xestia baja* (D.& S.). Lights produced **Parectopa ononidis* (Zell.), abundant *Argyresthia goedartella* (L.), *Coleophora alfacarensis* Baldizzone, *Epidola stigma* Stdgr., **Mirificarma lentiginosella* (Zeller), *Stomopteryx flavipalpella* Jäckh, *Dichomeris alacella* (Zeller), **Epinotia tenerana* (D.& S.), *Cydia coniferana* (Saxesen), *Acrobasis porphyrella* (Duponchel), *Drepana curvatula* (Borkhausen), *Idaea rubraria* Stdgr., **Eupithecia tenuiata* (Hb.), *Lymantria dispar* (L.), *Apaidia mesogona* (Godart) and mainly on the vertical sheet, abundant *Eilema caniola* (Hb.).

On 6 September, José and Patrícia took us to the western part of the Park. After lunch at Seia we went south through São Romão to the terraces of an abandoned forest nursery at Sazes da Beira. These were rich in butterflies including *Hipparchia alcyone* (D.& S.). Larvae of *Leucoptera lotella* (Stt.) and *Coleophora discordella* Zeller were found on *Lotus corniculatus*. On seedheads of *Achillea millefolium* there were numerous cases of **Coleophora argentula* (Stephens)

In the evening the Parque's biologist, José Paulo Pires took us up to the hilltop plateau south-west of Manteigas, where we were shown a seasonal lake, dry in September. We then set up lights at Alto do Espinheiro at about 1350 metres. This proved to be a rather disappointing spot, partly because the vegetation was not particularly interesting, but also because temperatures fell to much lower levels than on previous nights. The area appeared to be a frost hollow. About 32 species were recorded included *Paramesia gnomana* (Clerck), *Trichiura castiliana* (Spuler), *Chortodes pygmina* (Haw.), *Tholera decimalis* (Poda) and *Trigonophora jodea* (H.- S.).

On the evening of 7 September we were joined by Pedro Pires when we visited birch *Betula alba* and rowan *Sorbus aucuparia* woods at the head of the glacial valley of the Zêzere. These woods, near Albergaria at 1500 metres, face north to north-west and lose the late afternoon sunshine, allowing temperatures to drop quite low overnight. In the afternoon larvae of **Phyllonorycter sorbi* (Frey) were found mining *Sorbus*. By night about 47 species were recorded including **Ypsolopha scabrella* (L.), *Agonopterix nervosa* (Haw.), *Caryocolum fibigerium* Huemer, **Epinotia ramella* (L.), collected by Alison, *Chesias legatella* (D.& S.), *Enconista miniosaria* (Duponchel), *Agrochola haematidea* (Duponchel) and *Polymixis lichenea* (Hb.). It was interesting to see these autumnal species so early in the year, and it

brought home to me how much topography influences flight times. Further south in Portugal in warmer situations they would not be flying till November.

On 8 September, I saw *Cacyreus marshalli* Butler flying in the centre of Manteigas. This was not new for the Park, as it turned out that Pedro had seen it in Seia about an hour earlier!

That evening we went to Pyrenean oak *Quercus pyrenaica* woodland on the south-facing valley side above Manteigas at 1000 metres. Pedro joined us again, but was not able to stay on for the following night. About 120 species were recorded including *Ypsolopha lucella* (Fabr.), *Teleiodes huemeri* Nel, *Mirificarma cabezella* (Chrétien), *Notocelia incarnatana* (Hb.), *Pammene amygdalana* (Duponchel), *Crocallis dardoinaria* Donzel, *Euxoa cos* (Hb.), *Xestia castanea* (Esper), *Antitype chi* (L.) and *Luperina nickerlii* (Freyer).

The following afternoon, 9 September I revisited the valleyside above Manteigas. A bush of alder buckthorn *Frangula alnus* growing from a roadside ditch had several larvae of **Coleophora ahenella* Heinemann. Late in the afternoon there was a forest fire in the *Betula/Sorbus* woodland at the head of the valley less than a kilometre from where we had been working two nights earlier.

In the evening we went to the well-known waterfall at Poço do Inferno, south of Manteigas. At that time of year there was almost no water in the fall. Most of the area is heavily planted with trees, mainly species not native to the Serra such as beech *Fagus sylvatica* and sweet chestnut *Castanea sativa* and a number of conifers. There were also a few *Quercus pyrenaica*, *Alnus glutinosa*, *Salix* spp. and above the road and car park some *Betula* and *Sorbus*. Steep rocky banks were largely treeless with a mixture of grasses, *Dianthus lusitanus* and *Saxifraga fragosoi*. As on other nights wine ropes were used, but this was the first time in the week that the number of species attracted reached double figures. More notable species were *Menophra abruptaria* (Thunberg), *Peribatodes rhomboidarius* (D.& S.), *Selidosema taeniolarium* (Hb.), *Amphipyra pyramidea* (L.), **A. tetra* (Fabr.), *Polymixis dubia* (Duponchel), *Pseudenargia ulicis* (Stdgr.) and *Catocala nupta* again. About 96 species came to light including *Goidanichiana jourdheuillella* (Ragonot), *Batia lambdella* (Donovan), *Gladiovalva badidorsella* (Rebel), *Caryocolum schleichi* (Christoph), **Eana canescana* (Guenée), *Dioryctria sylvestrella* (Ratzeburg), **Phycitodes lacteella* (Rothschild), **Stenoptilia millieridactyla* (Bruand), *Macaria notata* (L.), *Glossotrophia rufomixtaria* Graslin, **Noctua tirrenica* Biebinger, Speidel & Hanigk and **Catocala fraxini* (L.). Driving through the woods on our journey home we had a glimpse of a small party of part-grown wild piglets *Sus scrofa* on the roadside.

We left the Serra at mid-day on 10 September. We drove up the valley past the area burnt the previous day and then over the high ground heading south to Covilhã, which lies at the foot of the southern edge of the Serra. The devastation caused by forest fires was nowhere more apparent than on this road. Hardly anywhere had escaped, and in some places houses had been severely damaged. Some fires had been recent, but the scars of fires in earlier years were still evident. Regeneration is very slow, perhaps due to heavy grazing. The fires are alleged to be started by

shepherds to improve the grazing; this seems the most likely explanation for fires in areas remote from roads. However, it seemed to me that there were more fires at the weekend than during the week, and that these were close to roads.

Before visiting Serra da Estrela, I had little idea of what we might expect to find. A trawl through the literature produced a list of about 110 species of moth. Candido Mendes (1913), who evidently visited the Serra on several occasions found very few species that could not be obtained elsewhere and considered the mountains disappointing, although he listed ten species that were found only at high altitudes. The reasons for his lack of success are not evident. It may be because he only visited the Zêzere valley in August. If he was only working by day, it is likely that he would have obtained little other than Crambinae. It is clear that he missed a great many species from the number we were able to add to the Portuguese list in just one week.

In total we recorded about 300 Lepidoptera species in Serra da Estrela during the week. A small number are still unnamed, particularly *Trifurcula* spp. and other Nepticulidae. A high proportion of this total (and most of the species recorded as new for Portugal) are widespread European species reaching their southern limit in the Iberian Peninsula in the Serra da Estrela and the nearby Sierra de Gredos in Spain. A lower number are widespread Mediterranean species, and fewer still are Iberian species. Perhaps the most notable of these are *Caryocolum arenbergeri* and *Charissa avilaria*, which were considered to be confined to the Sierra de Gredos. At least 26 species were added to the Portuguese Lepidoptera list.

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References

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Appendix.
Lepidoptera species added to the Portuguese fauna from Serra da Estrela.

All records except *Epinotia ramella* made by the author. Species marked + are known to occur elsewhere in Portugal, but the earlier record has not yet been published.

+*Stigmella trimaculella* (Haworth, 1828)
BEIRA ALTA: Manteigas, 9.9.2001, empty mines in *Populus*.

Parectopa ononidis (Zeller, 1839)
BEIRA ALTA: Rio Mondego near Videmonte, 5.9.2001

Phyllonorycter sorbi (Frey, 1855)
BEIRA ALTA: Albergaria, Vale do Zêzere, 7.9.2001, mines on *Sorbus aucuparia.*

Ypsolopha scabrella (Linnaeus, 1761)
BEIRA ALTA: Albergaria, Vale do Zêzere, 7.9.2001

Coleophora ahenella Heinemann, 1876
BEIRA ALTA: Carvalhais, N. of Manteigas, 8.9.2001, larvae on *Frangula alnus.*

Coleophora argentula (Stephens, 1834)
BEIRA ALTA: Sazes da Beira, 6.9.2001, larvae on *Achillea millefolium.*

Xenolechia aethiops (Humphreys & Westwood, 1845)
BEIRA ALTA: Covão do Boi, 4.9.2001

Mirificarma lentiginosella (Zeller, 1839)
BEIRA ALTA: Rio Mondego near Videmonte, 5.9.2001

Aroga velocella (Zeller, 1839)
BEIRA ALTA: Caldas de Manteigas, 4.9.2001

Caryocolum mucronatellum (Chrétien, 1900)
BEIRA ALTA: Covão do Boi, 4.9.2001

+*Caryocolum schleichi* (Christoph, 1872)
BEIRA ALTA: Poço do Inferno, 9.9.2001

Caryocolum proximum (Haworth, 1828)
BEIRA ALTA: Caldas de Manteigas, 6.9.2001

+*Caryocolum arenbergeri* Huemer, 1989
BEIRA ALTA: Caldas de Manteigas, 3.9.2001

+*Stomopteryx flavipalpella* Jäckh, 1959
BEIRA ALTA: Rio Mondego near Videmonte, 5.9.2001

Anacampsis populella (Clerck, 1759)
BEIRA ALTA: Caldas de Manteigas, 3.9.2001

Acleris sparsana (Denis & Schiffermüller, 1775)
BEIRA ALTA: Caldas de Manteigas, 8.9.2001

Eana canescana (Guenée, 1845)
BEIRA ALTA: Poço do Inferno, 9.9.2001

Lozotaeniodes formosanus (Geyer, 1830)
BEIRA ALTA: Caldas de Manteigas, 8.9.2001

Eudemis profundana (Denis & Schiffermüller, 1775)
BEIRA ALTA: Caldas de Manteigas, 7.9.2001

Epinotia tenerana (Denis & Schiffermüller, 1775)
BEIRA ALTA: Rio Mondego near Videmonte, 5.9.2001

Epinotia ramella (Linnaeus, 1758)
BEIRA ALTA: Albergaria, Vale do Zêzere, 7.9.2001, *leg.*A.S. Corley

Phycitodes lacteella (Rothschild, 1915)
BEIRA ALTA: Poço do Inferno, 9.9.2001

Ecpyrrhorrhoe rubiginalis (Hübner, 1796)
BEIRA ALTA: Caldas de Manteigas, 8.9.2001

Stenoptilia millieridactyla (Bruand, 1861)
BEIRA ALTA: Poço do Inferno, 9.9.2001

Charissa avilaria (Reisser, 1836)
BEIRA ALTA: Covão do Boi, 4.9.2001

Eupithecia tenuiata (Hübner, 1813)
BEIRA ALTA: Rio Mondego near Videmonte, 5.9.2001

Eilema pseudocomplana (Daniel, 1939)
BEIRA ALTA: Caldas de Manteigas, 6.9.2001

Catocala fraxini (Linnaeus, 1758)
BEIRA ALTA: Poço do Inferno, 9.9.2001

Amphipyra tetra (Fabricius, 1787)
BEIRA ALTA: Poço do Inferno, 9.9.2001

Noctua tirrenica Biebinger, Speidel & Hanigk, 1983
BEIRA ALTA: Poço do Inferno, 9.9.2001

Rearing the Fox Moth *Macrothylacia rubi* (L.) (Lep.: Lasiocampidae), an alternative strategy

I read with interest the account by Harry Eales (*antea*: 65-66) of his eventual successful overwintering and rearing of larvae of the Fox moth. At the risk of boring my friends in Yorkshire who have heard this story before, it may be of interest to recount the circumstances of my own success on the single attempt that I have made to rear this species.

On 28 May 1990, my friends Frank Botterill and John Newbould made an evening visit to Little Howden Moor, near Sheffield, during the course of which a female Fox moth was attracted to their m.v. light. It was temporarily enclosed in a jar by John and subsequently released at the end of the evening.

On the evening of 22 June the three of us met up to run m.v. lights at Anston Stones Wood, near Rotherham and during the evening as John took out a jar from his bag he noticed that there were some small larvae in the bottom. The explanation was evident, the female Fox moth had laid some ova in the jar and these had fairly recently hatched. Rather than have him tip out the survivors then and there, bearing in mind that there were no records of Fox moth at that site, I offered to take them home and attempt to rear them. I placed them, about a dozen in all, in a plastic fish tank covered with nylon stocking where they fed readily on the bramble *Rubus fruticosus* that I provided and grew quite quickly. Towards the end of September they appeared full grown and showed little interest in feeding so I placed several layers of newspaper in the bottom of the tank together with a couple of sprays of foodplant (just in case any were still hungry) and sited the tank in a sheltered position on the ground between a wooden boundary fence and my garden shed. I reared a large square of plywood against the fence, over the tank, to provide some protection against heavy rain. The larvae soon disappeared under the newspaper and I left them alone.